



## Comments on “Helping Solve the ‘Other’ Taxonomic Impediment: Completing the *Eight Steps to Total Enlightenment and Taxonomic Nirvana*” by Evenhuis (2007)

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Everyone agrees that describing biodiversity is lagging far behind 1) discovery of new biodiversity, and 2) extinction of biodiversity. In recent years there have been a number of different opinions on what to do about the slow rate of publication of new species descriptions. Some see the impediment as a complex interaction of low funding, and slow adoption of new molecular techniques and informatics (e.g., Wheeler *et al.*, 2004). Evenhuis (2007), on the other hand, in “Helping Solve the ‘Other’ Taxonomic Impediment: Completing the *Eight Steps to Total Enlightenment and Taxonomic Nirvana*”, sees the major impediment in the work habits of individual taxonomists. Too many taxonomists are collecting, sorting, identifying, but then failing to follow through and publish. Evenhuis cites his personal experience with an insect inventory of the Fiji Islands, and apparently his problem is not unique in biodiversity inventories (Evenhuis, 2007).

I can’t speak to what has or hasn’t happened with the Fiji inventory, I’ve never been offered a cool trip to anywhere on a National Science Foundation (NSF) Biotic Surveys and Inventories Program (BS&I) grant (except once to the side of a mountain, and that was because I was already in the country and didn’t need an airplane ticket), but I have noticed one curious coincidence: the steps in the taxonomic process that so trouble Evenhuis and other biotic inventory managers are the exact steps that the two NSF taxonomic flagship programs (BS&I and Partnerships for Enhancing Expertise in Taxonomy [PEET]) treat with not-so-benign neglect.

In the course of some fruitless attempts to get support from NSF’s BS&I, it became clear that when it comes to Evenhuis’ steps 5–8 (researching taxonomic literature, describing, publishing, educating others), NSF does expect these things to happen, *but it expects them to happen on someone else’s dime*. In the case of BS&I, the program assumes that someone, somewhere, will deal with the new morphospecies generated by the inventories, but alpha taxonomic activities are extraneous to an inventory project itself. In the PEET program “standard components of taxonomic monography”, including species descriptions, are among the expected outputs, but alpha taxonomy is clearly less interesting to the review panels than “computer infrastructure”.

This is not to accuse NSF of any particular malice toward alpha taxonomy: official disdain for publishing descriptions and keys goes back to the days of the New Synthesis triumphalism, and taxonomists themselves have been quick to parrot the phrase that systematics “is not just stuffy museum specimens”, or words to that effect. More telling are the priorities that institutions have when they advertise systematics positions. Anyone recall a job opening in recent years that said “the applicant should demonstrate a strong record of new species discovery and publication”? I can’t either. Evenhuis may have discovered the right path to taxonomic *Nirvana*, but if that same path leads to career *Naraka* (Wikipedia contributors, 2007), the taxonomic impediment will continue at full strength.

Since NSF is “the only game in town” for substantive systematic support in the United States, its “pass the buck” attitude is inevitably part of the reason why describing biodiversity is so far behind, and why even a free trip to Fiji is not enough to motivate some taxonomists. They are simply following the dictates of Modern Economic Man and not putting their efforts into activities that are guaranteed to produce no reward.

Fortunately for systematics and biodiversity, not all taxonomists follow the dictates of economics. In an interesting survey of European and Australian beetle specialists, Löbl & Leschen (2005) found that the majority worked “off the books” and at home. Because of this, and in spite of near-universal institutional scorn for alpha taxonomy, the rate of publication of new species is at least holding steady in recent years (Flowers, 2007). Granted, this steady rate is far below what is needed to address the rate of collecting new material, or the extinction crisis. But, while the extinction crisis is real enough, the “problem” with accumulation of new material is an artifact of the funding priorities of NSF and other granting agencies.

The solution is simple: make species descriptions, useable keys, and outreach (Evenhuis' steps 5–8) specific required deliverables on every BS&I and PEET grant. Taxonomists are an adaptable bunch. Many taxonomists in my age cohort are now “molecular systematists”, and I know that some of them became so because they saw that funding would be impossible otherwise. If funding became linked to describing new species, you can bet that many would switch back, some reluctantly but others gladly.

To respond to Evenhuis' rhetorical questions, yes, employers and taxpayers do indeed fund taxonomists to do only part of the job, and NSF-PEET funds only part of the taxonomic process. *And this is exactly how taxonomy funding in the United States is designed.* By explicitly making species descriptions part of how grant productivity is measured, NSF could accomplish two important goals. First, that gap between species descriptions and accumulation of specimens would at least stop increasing at current rates. Second, and more importantly, such a change would signal to other institutions that alpha taxonomy is an essential part of the study of biodiversity. If the decreasing numbers of practicing taxonomists need to be energized, a clear policy that puts financial and social rewards behind description and publication will be more effective than even a free trip to Fiji.

## Literature Cited

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